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(54) **Downlink beamforming method**

(57) A method for downlink capacity enhancement in a wireless communications system comprising a base station with antenna array and terminals that are physically remote from said base station, the method comprising steps of:

receiving at said base station antenna array combinations of arriving signals from said plurality of remote terminals;  
estimating an uplink channel covariance matrix (UCCM) for each of said terminals from said combinations of arriving signals;  
constructing from each of said UCCM a downlink channel covariance matrix (DCCM);  
calculating from all said DCCM a downlink weight vector for each of said terminals; and  
transmitting a set of information signals from said base station antenna array according to said downlink weight vectors.

